

**DECLARATION OF  
JOSHUA HALSTEAD  
ISO GOOGLE LLC'S  
MOTION FOR  
RELIEF RE  
PRESERVATION**

**Redacted Version  
of Document Sought  
to be Sealed**

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**UNITED STATES DISTRICT COURT**

**NORTHERN DISTRICT OF CALIFORNIA, OAKLAND DIVISION**

CHASOM BROWN, et al., on behalf of  
themselves and all others similarly situated,

Plaintiffs,

vs.

GOOGLE LLC,

Defendant.

Case No. 4:20-cv-03664-YGR-SVK

PATRICK CALHOUN, et al., on behalf of  
themselves and all others similarly situated,

Plaintiffs,

vs.

GOOGLE LLC,

Defendant.

Case No. 4:20-cv-05146-YGR-SVK

**DECLARATION OF JOSHUA HALSTEAD**

1. I am a Software Engineer employed by Google LLC. I have been employed at Google since 2015, and I joined the [REDACTED] team at the beginning of this year. Recently, I became the lead of the [REDACTED] team. In my capacity as Lead of the [REDACTED] team, I am responsible for supporting requests for data from [REDACTED]. As part of my duties, I am familiar with the tools available at Google to access, search, and store data in [REDACTED]. I make this declaration based on personal knowledge and information provided to me by Google colleagues, and if called to testify, I could and would competently testify to such facts.

2. I understand the Court issued preservation orders in the above-captioned cases requiring that Google preserve data in GAIA [REDACTED], DBL [REDACTED], and ZWBK [REDACTED], among other data sources. I understand the Court has ordered a daily "sample" preservation of data for 10,000 U.S.-based users in GAIA [REDACTED], DBL [REDACTED], and ZWBK [REDACTED] for the *Calhoun* case, and in GAIA [REDACTED] and DBL [REDACTED] for the *Brown* case.

1           3. To comply with the preservation orders, I, along with three other engineers, have  
2 spent at least [REDACTED] hours designing, scoping, configuring, implementing, testing, optimizing,  
3 debugging, and verifying the data preservation pipelines for GAIA [REDACTED] and DBL [REDACTED]. Once fully  
4 implemented, those pipelines will require monitoring, maintenance, and debugging, which I  
5 estimate will take at least [REDACTED] hours per week.

6           4. As of October 13, 2022, Google is storing approximately [REDACTED] of data in the  
7 form of backups of GAIA [REDACTED] and DBL [REDACTED] in order to meet the Court's requirement to store data  
8 back to July 30, 2022. Based on our work on the preservation pipelines so far, I anticipate that the  
9 pipelines will store approximately [REDACTED] per day, on average.


10          5. We did not implement an ongoing daily sampling pipeline for ZWBK [REDACTED] because it  
11 is no longer collecting data. There was no data in ZWBK [REDACTED] as of July 30, 2022.

12          6. We are also preserving four mapping tables that reside in [REDACTED]. Storing one snapshot  
13 of the tables will take approximately [REDACTED], and will grow at the rate of approximately [REDACTED]  
14 [REDACTED]/day.

15  
16 I declare under penalty of perjury that the foregoing is true and correct.

17 Executed on the 19th day of October 2022 at Mountain View, California.

18  
19 By:

DocuSigned by:  
  
6C22618C54504D5  
Joshua Halstead